

Applied Right Angle Trigonometry

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Grade 10 Academic Applied Trigonometry

Expectation:

Solve problems involving the measures of sides and angles in right triangles in real-life applications using primary trigonometric ratios and the Pythagorean theorem.

Learning Goals

Students will:

- Identify the hypotenuse of a right triangle
- Utilize the pythagorean theorem to solve right triangles
- Differentiate between the opposite and adjacent in a triangle
- Use the primary trigonometric ratios to solve real-world application problems

Agenda

Introduction

- Minds On

Instruction & Application

- Review of primary trig ratios (SOHCAHTOA)
- TPS/Group work or activity on a challenge problem/take up problem
- Independent/group work-- homework time

Consolidation & Assessment

- Ticket out the door/consolidation activity

Hook/Minds On

<http://www.youtube.com/watch?v=t2uPYYLH4Zo>

Review: Trig. ratios (SOHCAHTOA)

- GeoGebra:
 - Calculate Trig. Ratio: Trig. Ratio Example 1.ggb
 - Calculate Sides: Trig. Ratio Example 2.ggb

T-P-S Challenge Problem

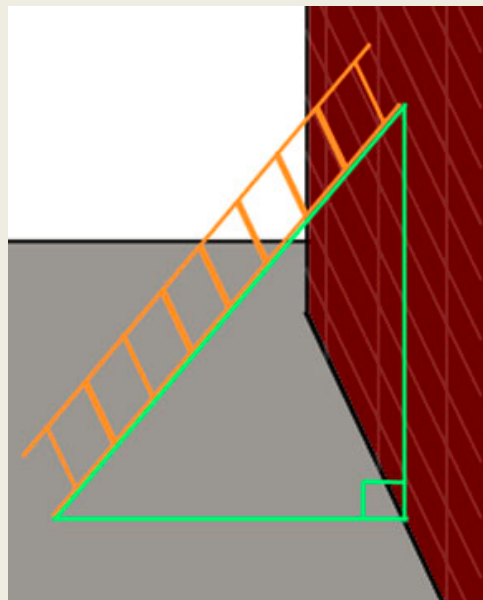
- Split the class into groups of 3 and allow them to TPS this problem.
- This is the first application problem they have seen so it may take them time to see the relation to SOHCAHTOA.
- Take up the question after they have completed it.

T-P-S Challenge Problem

Question:

Suppose that a 10m ladder is leaning against a building such that the angle of elevation from ground to the building is 62° . (See diagram)

- a) What does angle of elevation mean?
- b) Find the measures of the other two angles
- c) Find the distance from the ground to the top of the ladder.
- d) Find the distance from the foot of the ladder to the wall.



Worksheet

- Was kept short to minimize the amount of homework that students have
- Questions become progressively harder
- The Challenge Question
 - Optional question to accommodate diverse learning levels
 - Students instructed to research what an arc is
 - *What should the hint be?*
 - *Video*
 - *Diagram*
 - *Student-Directed Research*

Consolidation

- Use clickers to do questions on “Put out Fires.”

